



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,102	04/25/2001	Kenji Suzuki	401165	4985

23548 7590 09/30/2005
LEYDIG VOIT & MAYER, LTD
700 THIRTEENTH ST. NW
SUITE 300
WASHINGTON, DC 20005-3960

EXAMINER

ENGLAND, DAVID E

ART UNIT PAPER NUMBER

2143

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/841,102

Applicant(s)

SUZUKI ET AL.

Examiner

David E. England

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/25/2001, 8/2/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 16 are presented for examination.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the correcting unit determines the timer periodic correction value of said operation period timer by finding the value of said operation period timer at the synchronous timing of the periodic control indicated by the time stamp must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the third global timer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second transmitting unit must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure

Art Unit: 2143

must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to adequately teach how to make/ use the invention, i.e., failing to disclose periodic timing time.

7. Applicant's disclosure is insufficient to allow one of ordinary skill in the art to make or use the invention without undue experimentation because applicant did not adequately disclose the necessary apparatus to perform the claimed method. See In re Gunn, 190 USPQ 402, 406 (CCPA 1976.)

Claim 2 is rejected under 35 U.S.C. 112, first paragraph, for reason set forth in the objection to the specification.

8. It is suggested that applicant could overcome 112/first paragraph rejection by providing a suitably detailed system diagram (with appropriate cross-indexing in the detailed description to reference numerals on said system diagrams.) No new matter should be added.

9. The limitation of claim 15 that states, “a second transmitting unit” is not specifically found in the specification.

10. Claim 16 is rejected because of its dependency to claim 15.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 3 – 6, 9, 10 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. The limitations of, “timer correction value” and “timer period correction value” are not specifically supported by the specification as to what these limitations are used for. Furthermore, it appears in the specification that these two limitations are one in the same. Applicant is asked to clarify these limitations.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

15. Claims 1 – 8 and 10 – 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Voth U.S. Patent No. 6351821.

16. Referencing claim 7, as closely interpreted by the Examiner, Voth teaches a periodic control synchronous system for synchronizing periodic control between controllers connected in a network and devices connected said network, wherein

17. each of said controllers includes,

18. a first global timer controlled through said network, (e.g. col. 4, lines 34 – 53);

Art Unit: 2143

19. a control period timer which controls a control period of periodic control, (e.g. col. 4, lines 34 – 53);
20. a time stamp providing unit which provides a periodic transfer packet with a time stamp showing synchronous timing the control period designated by said control period timer by using a global time indicated by said first global timer, (e.g. col. 5, lines 33 – 49); and
21. a transmitting unit which transmits the periodic transfer packet provided with the time stamp to said devices, (e.g. col. 5, lines 33 – 49), and
22. each of said devices includes,
23. a second global timer controlled through said network, (e.g. col. 6, lines 15 – 31); and
24. a periodic control unit which synchronizes an operation period of said device with the control period using the synchronous timing time of the periodic control indicated by the time stamp of the periodic transfer packet transmitted by said transmitting unit and global time indicated by said second global timer, (e.g. col. 6, lines 32 – 54).
25. As per claim 8, as closely interpreted by the Examiner, Voth teaches storage of global timers and said controller comprises a latch unit which latches the global time of said first global timer, and holds the timer latched, (e.g. col. 4, lines 34 – 53), and
26. said control period timer latches the global time of said first global timer in said latch unit at the synchronous timing of the periodic control designated by said control period timer, (e.g. col. 4, lines 34 – 53), and

Art Unit: 2143

27. said time stamp providing unit provides the periodic transfer packet with the time stamp having the global time latched by said latch unit offset by a portion of the control period, (e.g. col. 4, line 54 – col. 5, line 6).

28. As per claim 10, as closely interpreted by the Examiner, Voth teaches said correcting unit includes,

29. a detecting unit which detects whether the time difference is within an allowable range, (e.g. col. 13, line 54 – col. 14, line 4); and

30. corrects said operation period timer based on the timer correction value or the timer period correction value when the time difference is within the allowable range, and does not correct said operation period timer when the time difference is outside of the allowable range, (e.g. col. 14, lines 5 – 23).

31. Referencing claim 11, as closely interpreted by the Examiner, Voth teaches each of said devices includes,

32. an operation control period timer which controls an operation period of said device itself, (e.g. col. 4, line 54 – col. 5, line 6 & col. 6, lines 32 – 54);

33. a comparing unit which compares the synchronous timing time of the periodic control indicated by the time stamp of the periodic transfer packet transmitted by said transmitting unit and the global time indicated by said second global timer, (e.g. col. 4, line 54 – col. 5, line 6 & col. 6, lines 32 – 54); and

34. a correcting unit which resets said operation period timer when the global time indicated by said second global timer reaches the synchronous timing time of the periodic control indicated by the time stamp, (e.g. col. 4, line 54 – col. 5, line 6 & col. 6, lines 32 – 54).

35. Referencing claim 12, as closely interpreted by the Examiner, Voth teaches said correcting unit resets said operation period timer when reaching the synchronous timing indicated by said operation period timer before the global time indicated by said second global timer reaches the synchronous timing time of the periodic control indicated by the time stamp, and resets said operation period timer again later when the synchronous timing time of the periodic control indicated by the time stamp at least reaches the global time indicated by said second global timer, (e.g. col. 4, line 54 – col. 5, line 6).

36. Referencing claim 14, as closely interpreted by the Examiner, Voth teaches said correcting unit determines the timer periodic correction value of said operation period timer by finding a value of said operation period timer at the synchronous timing of the periodic control indicated by the time stamp, or determines the timer periodic correction value of said operation period timer from the time difference between the synchronous timing time of the periodic control indicated by the time stamp and the global time indicated by said second global timer, and thereby corrects said operation period timer based on the timer periodic correction value, (e.g. col. 6, lines 32 – 54).

Art Unit: 2143

37. Referencing claim 15, as closely interpreted by the Examiner, Voth teaches a periodic control synchronous system synchronizing periodic control between controllers connected first and second networks, and devices connected to said first network and devices connected to said second network, wherein each of said controllers includes,

38. first global timer controlled through said first network, (e.g. col. 4, line 54– col. 5, line 6);

39. a second global timer controlled through said second network, (e.g. col. 4, line 54 – col. 5, line 6);

40. a control period timer which controls a control period of periodic control of said periodic control synchronous system, (e.g. col. 4, lines 34 – 53);

41. a time stamp providing unit which provides a periodic transfer packet transmitted periodically to said first and second networks with the time stamp showing synchronous timing of the control period designated by said control period timer using global time indicated by said first and second global timers, (e.g. col. 4, line 54 – col. 5, line 6);

42. a first transmitting unit which transmits the periodic transfer packet provided with the time stamp to at least one of said devices connected to said first network, (e.g. col. 6, lines 15 – 31); and

43. second transmitting unit which transmits the periodic transfer packet provided with the time stamp to at least one of said devices connected to said second network,

44. each of said devices connected to said first and second networks includes,

45. a third global timer controlled respectively through said first and second networks, (e.g. col. 6, lines 32 – 54); and

46. a periodic control unit which synchronizes an operation period of the corresponding device with the control period using the synchronous timing time of the periodic control indicated by the time stamp of the periodic transfer packet transmitted by said first and second transmitting units and global time indicated by said third global timer, (e.g. col. 6, lines 32 – 54).

47. Claims 1 – 6, 13 and 16 are rejected for similar reasons as stated above.

Claim Rejections - 35 USC § 103

48. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

49. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Voth (6351821) in view of Strong et al. (5689688) (hereinafter Strong).

50. As to claim 9, as closely interpreted by the Examiner, Voth does not specifically teach each of said devices includes,

51. an operation control period timer which controls the operation period of said device itself;

Art Unit: 2143

52. a comparing unit which compares the synchronous timing time of the periodic control indicated by the time stamp of the periodic transfer packet transmitted said transmitting unit and the global time indicated by said second global timer; and

53. a correcting unit which corrects said operation period timer by determining time difference between the synchronous timing time of the periodic control indicated by the time stamp compared by said comparing unit and the global time indicated by said second global timer at the synchronous timing indicated by said operation period timer, and determines a timer correction value or a timer period correction value of said operation period timer based on the time difference.

54. Strong teaches said device includes,

55. an operation control period timer which controls the operation period of said device itself, (e.g. col. 13, lines 27 – 38);

56. a comparing unit which compares the synchronous timing time of the periodic control indicated by the time stamp of the periodic transfer packet transmitted said transmitting unit and the global time indicated by said second global timer, (e.g. col. 13, lines 38 – 58); and

57. a correcting unit which corrects said operation period timer by determining time difference between the synchronous timing time of the periodic control indicated by the time stamp compared by said comparing unit and the global time indicated by said second global timer at the synchronous timing indicated by said operation period timer, and determines a timer correction value or a timer period correction value of said operation period timer based on the time difference, (e.g. col. 13, lines 38 – 58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Strong with Voth because it would be

more accurate for the device to accommodate for the latency from the transfer time to the arrival time of the packet to achieve as close to the time designated by the master global time.

Response to Arguments

58. Applicant's arguments filed 07/01/2005 and 12/30/2004 have been fully considered but they are not persuasive.

59. Applicant has submitted corrections to the Amendments that were filed 12/30/2004. Applicant has not submitted Remarks to the updated Amendment, so it will be assumed that the Remarks that were filed 12/30/2004 are to be applied to the most recent Amendment filing of 07/01/2005.

60. In the Remarks, Applicant argues in substance that the limitation of "correcting unit determines the timer periodic correction value of said operation period timer by finding the value of said operation period timer at the synchronous timing of the periodic control indicated by the time stamp" can be found in Figure 20.

61. As to part 1, Examiner has viewed Figure 20 and does not see any sign of a "correcting unit" that determines a timer periodic correction as stated in claim 14. Objection still stands until Applicant can point to a "correcting unit" of the claimed invention.

62. In the Remarks, Applicant argues in substance that the "third global timer of claim 15 can be found in Figure 21 as either elements 13a or 13b.

63. As to part 2, Examiner would like to draw the Applicant's attention to the claim language that states a first and second timer in which one has already interpreted elements 13a as a first timer and element 13b as a second timer. Objection still stands.

64. In the Remarks, Applicant argues in substance that the "second transmitting unit" of claim 15 is moot in view of the amendment of claim 15.

65. As to part 3, the Examiner would like to draw the Applicant's attention to the Amendment filed on 07/01/2005, in which the limitation of "second transmitting unit" is still taught in claim 15. Therefore, Objection still stands.

66. In the Remarks, Applicant argues in substance that the phrase "periodic timing time" was made in error and that claim 2 is amended so that the phrase "periodic timing time" is replaced with "synchronous timing time" and the rejection of claim 2 is now moot and should be withdrawn.

67. As to part 4, Examiner would like to draw the Applicant's attention to the amendment that was file 07/01/2005, in which one can see that claim 2 has not been amended in the way stated by the Applicant. Rejection still stands.

68. In the Remarks, Applicant argues in substance that contends that the limitations "timer correction value" and "timer period correction value" are not specifically supported by the specification. Applicants respectfully disagree, and direct attention to page 34, lines 10-22 and Figure 12 of the patent application, where the timer correction value is described as the time

difference between the global time of the global timers 13a, 13b at the local sync timing of the operation period timers 11a, 11b, and the synchronous (system sync) time indicated by the time stamp attached to the received periodic transfer packet 6. The timer correction value D12 is used to correct a time deviation between the control period indicated by the control period timer 10 and the operation period timers 11a, 11b. Regarding the phrase "timer period correction value," occurrences of that limitation are deleted from all claims, is the "timer period correction value" is substantially the same as the "timer correction value."

69. As to part 5, Examiner would like to draw the Applicant's attention to the claims, in which the phrase "timer period correction value" is still present in the claims and therefore the rejection still stands.

70. In the Remarks, Applicant argues in substance that the limitation "synchronous timing time" is referred to throughout the specification as "system sync" is described.

71. As to part 6, Examiner has reviewed the sections of the specification and agrees with the Applicant. Therefore, the limitation "synchronous timing time" is now bound to the phrase "system sync" and its meanings.

72. In the Remarks, Applicant argues in substance that Voth fails to teach every limitation of the amended claims 1 and 7 and therefore, cannot anticipate either of the two independent claims or the dependent claims. For example, Voth fails to teach that each device includes a correcting unit which corrects said operation period timer by *determining the time difference* between the global time indicated by said global timer of said device and the synchronous timing time

indicated by said controller at the synchronous timing time indicated by said operation period timer.

73. As to part 7, Examiner would like to draw the Applicant's attention to the amendments to claims 1 and 7 dated 07/01/2005, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., each device includes a correcting unit which corrects said operation period timer by *determining the time difference* between the global time indicated by said global timer of said device and the synchronous timing time indicated by said controller at the synchronous timing time indicated by said operation period timer) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

74. In the Remarks, Applicant argues in substance that Voth fails to teach every limitation of amended independent claim 15. Clearly, Voth fails to teach a controller having a first global timer controlled through said first network and a second global timer controlled through said second network. Voth discloses only one network, and says nothing of a controller having two timers controlled through different networks (see Figures 1 and 4 of Voth). Thus, Voth fails to teach every limitation of amended claims 1, 7, and 15.

75. As to part 8, Examiner would like to draw the Applicant's attention to the prior art of Voth, column 4, lines 16 – 32. In which, one can see that “*Nodes 102 are interconnected via computer network 104. Network 104 is intended to be representative of any number of different types of networks.*” This could make one interpret that each node 102 can be in a separate

different network which would also make one interpret that node 102 is the global timer for that different network. Therefore Voth reads on the Applicant's claim language as broadly interpreted.

76. In the Remarks, Applicant argues in substance that the Official Action rejects claim 9 as unpatentable over Voth in view of Strong. That rejection is moot in view of the cancellation of claim 9.

77. As to part 9, Examiner would like to draw the Applicant's attention to the amendment dated 07/01/2005, in which one can see that claim 9 is not canceled. Therefore, Rejection still stands.

Conclusion

78. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 571-272-3912. The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David E. England
Examiner
Art Unit 2143

De



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100